





1977  
CENSUS OF  
CONSTRUCTION  
INDUSTRIES

CC77-1-10(P)

Issued March 1979

Industry Series

Preliminary Report

# Plumbing, Heating (Except Electric), and Air Conditioning Special Trade Contractors SIC 1711

During 1977, the establishments with payroll in this industry had business receipts of \$21.4 billion. Of this amount, \$21.1 billion were receipts for construction work, an increase of 37 percent compared with 1972. Their payments for construction work subcontracted to others amounted to \$1.9 billion leaving net construction receipts of about \$19.1 billion. There were 458.1 thousand employees in this industry in 1977, which is about the same as for 1972. Payroll for 1977 amounted to \$6.4 billion. Value added at \$10.5 billion in 1977 was 34 percent more than in 1972.

The Plumbing, Heating (Except Electric), and Air Conditioning Special Trade Contractors industry includes establishments primarily engaged in plumbing, heating (except electric), or air conditioning work or any combination of these types of work. Sheet metal work combined with any of these types of work is included in this industry, but roofing and sheet metal contractors are classified in industry 1761. This industry (1711) includes mechanical contractors, steam fitting contractors, ventilating work contractors, refrigeration contractors, boiler erection contractors, furnace repair contractors, fuel oil burner installation and servicing contractors, cesspool construction contractors, and plumbing repair contractors. It also includes establishments engaged in the installation of sprinkler systems, septic tanks, and sump pump and water pump installation and servicing. Electric heating contractors are classified in industry 1731. For a more detailed description, see the 1972 SIC Manual.<sup>1</sup>

For this census, a "construction establishment" was defined as a relatively permanent office or other place of business at which or from which the usual business activities related to construction were conducted. A separate census report was required from each establishment but not from each construction site. Instead, the data for work at each site were included in the report from the appropriate office or branch office. Foreign

construction activities were not included in this census.

The 1977 Census of Construction Industries is the sixth census of construction establishments in the United States. As in previous years, it was conducted jointly with the censuses of mineral industries, manufactures, retail trade, wholesale trade, and service industries under authority of title 13 of the United States Code. Although the first construction census was conducted covering 1929, only the data from the censuses of 1967 and 1972 are comparable with the 1977 data.

The 1977 estimates for establishments with payroll in all of the construction industries are based on reports from a probability sample of approximately 181,000 establishments selected from about 536,000 construction establishments with payroll. The sample included all construction establishments with a payroll equivalent of 15 or more full-time employees and a sample of those with fewer employees. There were two exceptions: In SIC 1521, sampling was employed in establishments with less than 20 employees because of the large number of establishments in that industry; in SIC 1795, all known establishments were included because of the very small number of establishments in that industry. The data obtained from the sample were inflated to represent all construction establishments with payroll. Complete descriptions of the sampling and estimating procedures will be included in the final reports.

Since the data in this report are based on a sample, they are subject to sampling variability and may be expected to differ from results which would have been obtained if a complete census had been taken using the same schedules and procedures. The standard error shown in the tables is a measure of sampling variability, i.e., the variation that might occur by chance

<sup>1</sup> Standard Industrial Classification Manual: 1972. For sale by Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. Stock No. 4101-0066. Price \$6.75. 1977 Supplement. Stock No. 003-005-00176-0. Price 90 cents.



U.S. Department  
of Commerce  
BUREAU OF  
THE CENSUS

For sale by Subscriber Services (Publications), Bureau of the Census, Washington, D.C. 20233, or any U.S. Department of Commerce district office. Postage stamps not acceptable; currency submitted at sender's risk. Remittances from foreign countries must be by international money order or by draft on a U.S. bank. 35 cents per copy.

Table 1. Detailed Statistics for Establishments With Payroll: 1977, 1972, and 1967

(Thousands of dollars. Detailed figures may not add to totals because of rounding. For meaning of abbreviations and symbols, see text)

Item	Plumbing, heating (except electric), and air conditioning special trade contractors (1711)			Standard error of estimate (percent)		
	1977	1972	1967	1977	1972	1967
Number of establishments.....	56,475	53,301	47,515	1	1	2
Proprietors and working partners.....	28,717	30,746	33,815	2	2	2
All employees:						
March.....	427,220	425,533	346,763	1	1	1
May.....	458,594	444,633	359,249	1	1	1
August.....	476,375	471,877	383,646	1	1	1
November.....	467,926	463,292	370,283	1	1	1
Average.....	458,091	456,100	369,131	1	1	1
Construction workers:						
March.....	340,333	342,751	285,869	1	1	1
May.....	367,160	361,099	297,390	1	1	1
August.....	385,953	385,330	320,701	1	1	1
November.....	377,680	376,386	308,118	1	1	1
Average.....	368,273	371,113	306,923	1	1	1
Other employees:						
March.....	86,887	82,782	61,094	1	1	1
May.....	91,434	83,534	61,827	1	1	1
August.....	90,422	86,547	62,528	1	1	1
November.....	90,246	86,906	61,999	1	1	1
Average.....	89,935	84,982	63,086	1	1	1
Payroll, all employees.....	6,402,314	4,787,958	2,844,740	1	1	1
Payroll, construction workers.....	5,011,662	3,809,878	2,307,043	1	1	1
Payroll, other employees.....	1,390,652	978,080	537,803	1	1	1
First quarter payroll, all employees.....	1,398,359	(NA)	(NA)	1	(NA)	(NA)
Employer costs for fringe benefits.....	1,186,930	(NA)	(NA)	1	(NA)	(NA)
Legally required expenditures.....	611,484	(NA)	(NA)	1	(NA)	(NA)
Voluntary expenditures.....	575,447	(NA)	(NA)	1	(NA)	(NA)
All business receipts.....	21,418,741	15,615,468	10,058,953	1	1	1
Total construction receipts.....	21,051,390	15,321,135	9,932,963	1	1	1
Receipts for work subcontracted in from others.....	10,898,137	6,618,199	4,032,889	1	1	1
Other business and land receipts.....	367,351	294,333	127,043	2	2	1
Net construction receipts.....	19,116,908	13,594,125	8,766,968	1	1	1
Value added.....	10,470,442	7,794,530	4,758,236	1	1	1
Selected payments.....	10,948,300	7,820,938	5,300,771	1	1	1
Materials, components, and supplies.....	8,504,133	16,093,928	14,134,327	1	1	1
Construction work subcontracted to others.....	1,934,483	1,727,010	1,166,153	1	1	1
Selected power, fuels, and lubricants.....	509,685	(NA)	(NA)	1	(NA)	(NA)
Electricity.....	41,611	(NA)	(NA)	1	(NA)	(NA)
Natural gas.....	215,858	(NA)	(NA)	1	(NA)	(NA)
Gasoline and diesel fuel.....	227,090	(NA)	(NA)	1	(NA)	(NA)
Lubricating oils and greases.....	17,917	(NA)	(NA)	2	(NA)	(NA)
Other.....	7,210	(NA)	(NA)	4	(NA)	(NA)
Rental payments for machinery, equipment, and structures.....	184,018	(NA)	(NA)	1	(NA)	(NA)
For machinery and equipment.....	106,853	59,520	26,062	2	3	2
For structures.....	77,165	(NA)	(NA)	1	(NA)	(NA)
Selected purchased services.....	259,296	(NA)	(NA)	3	(NA)	(NA)
Communication.....	117,674	(NA)	(NA)	3	(NA)	(NA)
Repairs to structures and related facilities.....	18,500	(NA)	(NA)	2	(NA)	(NA)
Repairs to machinery and equipment.....	123,122	(NA)	(NA)	4	(NA)	(NA)
Capital expenditures.....	388,966	222,285	107,071	2	2	2
New.....	322,923	182,469	84,410	2	2	2
Structures and related facilities.....	47,420	37,960	15,650	9	7	4
Machinery and equipment, including automobiles and trucks.....	275,503	144,509	68,760	2	2	1
Automobiles and trucks intended primarily for highway use.....	183,921	(NA)	(NA)	2	(NA)	(NA)
Used.....	66,043	39,816	22,661	3	6	5
Structures and related facilities.....	12,742	21,571	10,621	9	9	8
Machinery and equipment, including automobiles and trucks.....	53,301	18,245	12,040	3	4	5
Fixed assets and depreciation:						
Gross book value of depreciable assets at end of year.....	2,229,177	1,498,811	(NA)	1	2	(NA)
Accumulated depreciation at end of year.....	1,090,184	691,706	(NA)	1	3	(NA)
Net value of depreciable assets at end of year.....	1,138,994	807,105	(NA)	1	2	(NA)
Depreciation charges during year.....	238,845	176,313	(NA)	1	3	(NA)
Structures, additions, and related facilities:						
Gross book value of depreciable assets at end of year.....	586,148	421,862	(NA)	2	2	(NA)
Accumulated depreciation at end of year.....	201,193	126,291	(NA)	2	2	(NA)
Net value of depreciable assets at end of year.....	384,955	295,571	(NA)	2	2	(NA)
Depreciation charges during year.....	33,085	32,844	(NA)	3	3	(NA)
Machinery and equipment:						
Gross book value of depreciable assets at end of year.....	1,643,030	1,076,949	(NA)	1	3	(NA)
Accumulated depreciation at end of year.....	888,991	565,415	(NA)	1	3	(NA)
Net value of depreciable assets at end of year.....	754,039	511,534	(NA)	1	2	(NA)
Depreciation charges during year.....	205,760	143,469	(NA)	1	4	(NA)

<sup>1</sup>Includes data for power, fuels, and lubricants, now shown separately.



**Table 2. Construction Receipts for Establishments With Payroll by Type of Construction: 1977 and 1972**

(Thousands of dollars. Detailed figures may not add to totals because of rounding. For meaning of abbreviations and symbols, see text)

Item	Plumbing, heating (except electric), and air conditioning special trade contractors (1711)		Standard error of estimate (percent)	
	1977	1972	1977	1972
Construction receipts.....	21,051,390	15,321,135	1	1
Building construction.....	17,284,238	13,524,042	1	1
Single-family houses.....	5,279,342	3,372,245	1	2
Apartment buildings.....	1,415,838	1,835,768	1	1
Other residential buildings.....	500,141	440,054	1	2
Industrial buildings and warehouses.....	3,455,274	2,485,087	1	1
Office and bank buildings.....	1,672,370	1,432,504	1	1
Stores, restaurants, public garages, and automobile service stations....	1,304,027	824,767	1	2
Religious buildings.....	296,413	217,731	1	2
Educational buildings.....	1,348,886	1,452,877	1	1
Hospitals and institutional buildings.....	1,632,975	1,239,932	1	1
Amusement, social, and recreational buildings.....	158,056	137,565	2	4
Other nonresidential buildings.....	220,916	85,512	3	5
Nonbuilding construction.....	1,633,184	704,514	1	2
Sewers, water mains, and related facilities.....	412,171	260,886	4	4
Power plants.....	379,255	123,345	2	2
Sewage treatment and water treatment plants.....	415,913	154,613	1	2
Other nonbuilding construction.....	425,845	165,670	2	2
Construction work not specified by kind.....	2,134,330	1,092,579	2	3

Note: See text for explanation of duplication.

because only a sample of the population was surveyed. As calculated for this report, the standard error partially incorporates the effect of random errors of response, but it does not take into account the effect of any consistent biases due to those types of errors. The chances are about 68 out of 100 that an estimate from the sample would differ from a complete census by less than the standard error. The chances are about 95 out of 100 that the difference is less than twice the standard error.

This report does not include figures for separate administrative offices, warehouses, garages, or other auxiliary units which service construction establishments of the same company. Data for separate central administrative offices and auxiliaries are collected in the enterprise statistics survey, a part of the economic censuses.

This report is one in a series presenting preliminary data collected in the 1977 Census of Construction Industries. The universe for this census included all establishments classified in the construction industries (SIC's 15, 16, 17, and 6552). This report will be superseded by a more detailed final report. In addition to data for establishments with payroll presented here, the final Industry Summary report and the reports in the Geographic Area Series will present limited data for construction establishments with no payroll during 1977.

The totals of construction receipts reported by all construction establishments in each of the several industry, State, or other groupings in this census contain varying amounts of duplication, since the construction work (and the receipts) of one firm may be subcontracted out to other construction firms and, therefore, will be included in the subcontractor's receipts.

To avoid this duplication, a "net construction receipts" figure has been derived by subtracting the payments made for construction work subcontracted to others from the construction receipts.

Usually, "value added" is the best measure for comparing the relative economic importance of industries or areas. It eliminates the duplication in receipts because of subcontracting. It also eliminates from the output measure the cost of materials, which differs in relative importance among areas and industries. For this census, "value added" is equal to all business receipts less payments for construction work subcontracted to others and payments for materials, components, supplies, and fuels. However, for industries for which land receipts are significant, "value added" is equal to all business receipts less land receipts, payments for construction work subcontracted to others, and payments for materials, components, supplies, and fuels.

The symbols in the tables mean:

- Represents zero.
- D Withheld to avoid disclosing figures for individual companies; figures are included in higher level totals.
- S Withheld because estimates did not meet publication standards on the basis of either the associated standard error or a consistency review.
- Z Standard error of estimate is greater than zero but less than 1 percent.
- a Sampling error is greater than 40 percent.
- NA Not available; data were not collected.

U.S. Department  
of Commerce  
BUREAU OF THE CENSUS  
Washington, D.C. 20233  
Official Business

Post:

